Understanding fluency in novice level speakers

Robert Long

Masatoshi Tabuki

Kyushu Institute of Technology

In regard to the issue of fluency a great deal of research has ignored the role of pauses and fillers in novice-level speech. In early 2010, 65 participants were asked to state what they had learned in their English class for the past year. The 65 mono-logues were analyzed in regard to the amount of silence, speech length, and mean length runs. Three groups representing novice high, mid, and low levels were then organized, each having 12 subjects. Hypotheses focused on whether there were significant differences relating to pause duration, pause frequency, and mean length runs among the three levels. Results from an ANOVA indicated that there was a significant difference in pause duration, but not in mean length runs or pause frequencies.

英語の流暢さという論点に関して、多くの研究では、初歩レベルのスピーチにおけるpause（一時中断、小休止）やfiller（ahやyou　knowなどのつなぎ言葉や発声）の役割を見逃していることが多い。2010年の初めに、65名の参加者に対して、前年の英語の授業で学んだことについて述べるという課題を与えた。その65のモノローグ（口頭での回答談）を分析し、沈黙の回数、スピーチの長さ、および（pauseとpauseの間の）スピーチの1区切りの長さの平均を調べた。その結果を見て初歩レベルの上・中・下の3グループを作り、各グループを12名で構成した。仮説は、pauseの持続時間、pauseの頻度、スピーチの1区切りの長さの平均が、3つのレベル間で有意差があるかどうかに焦点を当てた。ANOVA（分散分析法）による結果は、pauseの持続時間とスピーチの1区切りの長さの平均値には有意差が現れたが、pauseの頻度には有意差が見られなかった。

While people are easily judged by how they dress, the same could be said for how fluently they can express themselves. All too often a person is judged not only by the content of his or her speech, but also by *how* he or she says it. Over the past two decades, the definition for fluency has also proven problematic for researchers. Skehan (1996) defined fluency as the ability to produce language in real time without undue pausing or hesitation. In time, researchers began to argue that fluency should be measured as: (a) speech rate (e.g., number of syllables per minute of speech, length of run, pause length, silence, false starts, repetitions, and reformulations), (b) complexity (the elaboration or ambition of the language that is produced), (c) the learner's preparedness to take risks and to restructure their interlanguage. Even with this criteria, however, there is a great deal of ambiguity as it relates to clearly defining levels of fluency. Past proficiency evaluations have been of little help. In its description of speech proficiency given by the American Council for the Teaching of Foreign Languages (ACTFL) proficiency guidelines, fluency is poorly described. Novice-low speech is described as oral production consisting of isolated words and a few high-frequency phrases whereas novice-mid speech differs with learned phrases, increased quantity, and a vocabulary that is suitable for dealing with elementary needs and everyday courtesies. The speech at this level is also said to contain frequent and long pauses and repetition of interlocutor's words. Speakers may have some difficulty producing even the simplest utterance. As for novice-high speech, ACTFL states while there are signs of spontaneity, there is little real autonomy of expression.

Despite the inadequate evaluations and descriptions regarding fluency, there has been a great deal of research on it in a wide variety of journals. Raupach (1987) notes that fluency tended to be associated with choppy utterances and hesitant and disrupted speech whereas Lennon (1990) saw it as a skill that is different from other linguistic aspects such as memory, syntactic complexity, and pronunciation. The issue of fluency becomes more confused in that native speakers often exhibit many hesitations and pauses, which are deemed appropriate. Gregory (2004) argues that the use of pauses should be taught as a skill in speech communication though there are certain norms to be followed if they are to be viewed as effective.

Even with more research being done, fluency is still probably the least understood aspect of language learning. One reason for this is the difficulty of evaluating fluency, due to the subjective and time-consuming nature of evaluation. A second issue is the lack of software applications, texts, or tasks that can evaluate and track fluency gains. A third problem is obtaining valid data that can adequately describe fluency at novice, intermediate and advanced levels so that teachers can be able to track and evaluate performance. The purpose of this case study is to identify possible differences among the three novice levels (low, mid, and high) as they pertain to fluency, specifically, pausing (frequency and duration), mean length runs, fluency rates, and lexical cooccurrences which are related to pausing. This data will help teachers to better identify and address any problems that might be more prevalent in these three levels of novice speakers.

Review of literature

The discipline of pausology was defined by O'Connell and Kowal (1980) as the behavioral investigation of temporal dimensions in speech. It is important to note that temporal variables in speech production are objective and quantifiable which can help one understand the social and psychological reasons behind particular pauses. Van Donzel and Koopsman-Van Beinum (1996) point out that in prepared speeches and in spontaneous speeches, speakers use pausing strategies to structure the continuation of the discourse. Thus, speakers wait at certain points

in order to determine the utterances to follow because the exact content in speech is not fixed as it is in reading texts.

The research that Riggenbach (1991) conducted showed that the frequency of unfilled pauses is a strong indicator of non-fluency although these pauses need to be further differentiated according to place and function. Richards, Platt, and Platt (1992) defined pausing as "a commonly occurring feature of natural speech in which gaps or hesitations appear during the production of utterances" (p. 267). Their studies have also examined pausing as it occurs in reading, speaking, and between genders, and the results indicated that pauses generate the listener's expectation about prospective utterances, and signal emphasis. What remains to be seen is whether or not the frequency of pauses is tied to ungrammatical English or if the pauses are used to *fill in* particular words or just to give the speaker time to reflect on what to say next.

Lewin, McNeil, and Lipson (1996) examined pauses and verbal dysfluencies as an indication of speaking anxiety. The authors investigated as to whether speech disruptions, periods of silence, and a slower rate of speech were more prevalent in high-speech subjects than in their low-anxiety counterparts. After examining categories of pauses, pause length, verbal errors (corrections, distortions, fragments, repetitions) and delaying verbalizations, Lewin found that the measures of state anxiety immediately before and during the speech task did not correlate with dysfluencies or pauses. The conclusion was that pausing maybe be a form of escape.

For research purposes, Wendel (1997) and Yuan and Ellis (2003) used a fluency measure that takes into account both the amount of speech and length of pauses. The first measure, Rate A, examines the number of syllables per minute (which is divided by the number of seconds used to complete the task multiplied by 60) whereas the second measure, Rate B, is based on the number of meaningful syllables per minute but without any syllables or words that were repeated, reformulated or replaced. To sum up, uncertainty does exist in identifying the specific differences among the three novice levels of Japanese false beginners. Clearly, what is needed is a study that investigates the specific aspects of

speech rates, mean length runs, pause duration and frequency, and verbal dysfluency, particularly among Japanese EFL learners.

The study
Purpose

Preliminary research (Long and Tabuki, 2010) was carried in 2009 as it related pauses as they occurred in student interviews. The aim of this study was to identify the frequency, duration and placement of the pauses in the interviews as well as to identify particular grammatical errors that were closely related to the pauses. The results indicated that grammatical errors were associated to pauses, preposition deletions, repetitions, and omissions. Furthermore, it was clear that there were distinct differences between the students who were more proficient (novice-high) as compared to those who could be considered less proficient (novice-low) students, specifically as it related to pause duration, frequency, and mean length runs. Specifically, the focus will be on pausing (frequency and duration), mean length runs, fluency rates, and any lexical co-occurrences related to pausing of Japanese first-year university students. By better understanding how fluency and pausing changes with proficiency, teachers can more effectively focus their teaching strategies and tasks for their own students who are at this level and how gains in proficiency, and vocabulary affect fluency rates.

Hypotheses

The data is to be examined for potential differences and patterns relating to pauses and mean length runs as well as of lexical co-occurrences repetition, discourse markers, sub-vocalization, fillers, and the use of Japanese. For the 12 subjects in each of the three novice levels, there were three hypotheses as follows:

1. There will be no significant difference in the frequency and duration in students' pauses.

2. There will be no significant difference in sentence mean length runs in students' speech.

3. There will be no important differences in the lexical co-occurrences of pauses and repetition, discourse markers, sub-vocalization, fillers, and the use of Japanese.

Participants

This study involved the first year Japanese university students, engineering majors, who were taking an obligatory first year English conversation course. Students were aged from 18 to 19. The students were from three classes that had been organized based on the results of a university placement exam. The exam was based on 40 questions related to vocabulary, 12 questions related to reading comprehension, and eight questions relating to language use. Each class was based on the scores of the students. One class had students who had scored the highest, (48 to 45 points) with each other class based on scores ranging from 39 to 35 points, and then a class with the lowest scores (33 to 13).

Materials

This preliminary case study examines the issue of pauses as they occur in monologues; 68 students were videotaped in February 2010, during their last English class for the year of 2009-2010. The students were asked to answer what they had learned in their English class for the past year. Students did not know of the topic beforehand and did not know that the data would be used for research purposes. Of the 68 students that were videotaped, three students were not able to answer the question and did not provide any verbal comment. Transcripts of the remaining 65 videotapes (1 hour, 51 minutes and 11 seconds) were then completed (see Appendix 1). Transcriptions were based on Conversational Analysis (CA) conventions (see Appendix 2).

Procedures

To better understand possible differences in fluency among the three novice levels, 12 transcripts for each level were selected based on the percentage of silence in the subjects' speech. For those novice-low subjects that had scored the lowest on the placement exam, the amount of silence ranged from 64.9% to 85% in the monologue, averaging 73.4%. Participants spoke from 2:30.60 to 0:40.50, averaging 1:04.6 seconds. For those subjects that were categorized as novice-mid subjects, the amount of silence ranged from 44.7% to 59.5%, averaging 52.7%. The spoken range of these subjects was from

2:54.11 to 1:12.24, averaging 1:09.4 minutes. The amount of silence in novice-high subjects ranged from 9.3% to 37.5% and averaged 25.6%. Subjects spoke from 2:55.72 to 0:59.7 seconds, averaging 1:09.1 minutes.

Data analysis

The software utilized in the study was Audacity 1.2 a comprehensive digital audio editor. The data utilized in the analysis was actualized in two stages: (1) the videotape of each student was played in QuickTime Player 7.6 which was then digitized by Audacity in order to determine the exact length of time that the participants spent speaking. The speech waves were extracted at 44100Hz. By examining the spectrograms of each monologue, it was possible to identify the duration of pauses in milliseconds. The measurements were then put into a statistical analysis program, SPSS 11.5 (Statistical Package for the Social Sciences), for means and means comparisons. In addition to looking at pause frequency, duration, and mean length runs, there were two additional measures for fluency (Rates A and B) as identified by Wendel (1997). Mean length runs were calculated as the mean number of syllables produced in utterances between pauses of 1.0 and above. Japanese words along with unintelligible words were not counted.

Results

Concerning the first two hypotheses related to pauses and mean length runs, an ANOVA indicates, at a significance level of $p<0.05$, that there were significant differences in pause durations, but not in pause frequencies and mean length runs.(see Table 1).

Table 1. Results of One-way ANOVA for novice-level speech

(1) *Pause frequencies*

	Sum of squares	df	Mean square	F	Sig
Between groups	40.056	2	20.028	1.611	.215
Within groups	410.250	33	12.432		
Total	450.306	35			

(2) *Mean length runs*

	Sum of squares	df	Mean square	F	Sig
Between groups	58.205	2	29.103	5.256	.010
Within groups	182.715	33	5.537		
Total	240.920	35			

(3) *Pause durations*

	Sum of squares	df	Mean square	F	Sig
Between groups	339.804	2	169.902	13.820	.000
Within groups	405.685	33	12.293		
Total	745.489	35			

It is apparent that proficiency is related to gains in fluency insofar as talking longer between pauses and in reducing pause duration. The number of pauses do not necessarily decrease in all of the levels. It should be noted that novice-low speakers rely more on the use of Japanese after pausing and with fillers. As for the duration of pauses that preceded fillers, the results were H=5.6, M=8.1, and L=16.2 seconds, yet novice-high speakers used twice as many fillers than did novice-low speakers. Finally, to further corroborate the above data, fluency measures (Wendel, 1997; Yuan & Ellis, 2003) Rate A and B were used for all three groups. The results, shown in Table 2, indicate marginal improvement for all groups.

It should be noted that novice-low speakers paused twice as long as those at the novice-mid range. Also, in looking at the issue of micropauses, it was found that novice low speakers used only a total of 18 micropauses (9.2% of the total), as compared to novice-mid speakers who had 76 (38.9%) and novice-high speakers who had 101 micropauses (51.9%).

As for the third hypothesis concerning the lexical co-occurrences of pauses and repetition, discourse markers, fillers and the use of Japanese, we found that in the low-novice level, 10 uses of Japanese, 10 instances of pauses and fillers, 9 instances of pauses and discourse

Table 2. Fluency rates A and B

Novice low				Novice mid				Novice high			
Rates / students	A	B	A-B	Rates / students	A	B	A-B	Rates / students	A	B	A-B
L-1	6.0	1.8	4.2	M-1	51.7	32.4	18.8	H-1	59.3	37.5	21.8
L-2	13.0	6.4	6.6	M-2	43.6	31.8	11.8	H-2	45.6	31.0	14.6
L-3	16.2	13.3	2.9	M-3	51.9	38.7	13.2	H-3	40.4	29.7	10.7
L-4	40.8	33.4	7.4	M-4	42.3	37.0	5.3	H-4	36.2	24.0	12.2
L-5	22.0	19.4	2.6	M-5	21.0	13.0	8.0	H-5	35.5	20.8	14.7
L-6	18.3	8.7	9.6	M-6	19.6	18.8	0.8	H-6	50.3	40.0	10.3
L-7	23.6	17.7	5.9	M-7	36.7	30.5	6.2	H-7	64.5	48.5	16.0
L-8	18.1	18.1	0.0	M-8	27.9	20.2	7.7	H-8	68.8	56.3	12.5
L-9	13.0	4.6	8.4	M-9	38.9	30.5	8.6	H-9	69.8	67.5	2.3
L-10	31.5	7.4	21.1	M-10	39.0	30.3	9.0	H-10	74.3	62.3	12.0
L-11	36.5	16.9	19.5	M-11	29.4	25.1	4.3	H-11	40.6	45.0	6.5
L-12	25.2	24.2	1.0	M-12	44.8	29.9	18.9	H-12	54.3	41.3	9.3
Average	22.0	14.3	7.40	Average	37.2	28.1	9.30	Average	53.3	41.9	11.9

markers whereas at the mid-novice level, the subjects had one use of subvocalization, five uses of Japanese, 23 occurrences of pauses and fillers, 17 uses of pauses and discourse markers. In the high-novice level, one use of subvocalization, two instances of Japanese, 27 occurrences of pauses and fillers, and 17 uses of pauses and discourse markers.

While some research (*e.g.,* Chambers, 1997) indicates that identifying the *place* of pauses in an utterance is important, this can often be difficult, if not impossible to do, in examining the speech of novice-level speakers due to the fragments, disconnected phrases, and incoherent speech. What is possible is to look at two functions of pauses, as hesitation markers and as signals for new information. Pauses that seemed to act as hesitation markers were identified as preceding

(PP) repeated lexis and fillers whereas pauses preceding the discourse markers of *and, but, so,* and *because* signaled new information, see Table 3. As can be noted there is a slight increase in pauses preceding repetition, perhaps due to the increased output among the novice-high speakers whereas pauses preceding fillers actually decreased in this group. Novice-low speakers used fewer discourse markers than novice-high speakers indicating a lack of syntactical complexity in their speech.

Finally, in addition to looking at novice-level speakers in three categories (low, mid, and high), an attempt was made to examine just the differences between two slightly larger groups of novice-low speakers and novice-high subjects. Forty students from the 65 that were videotaped were sorted into novice-low and novice-high

Table 3. Pause functions

Level	Novice-low			Novice-mid			Novice-high		
	PP	Total usage	%	PP	Total usage	%	PP	Total usage	%
-repeated lexis	4	28	14.2	7	34	20.5	17	65	26.1
-fillers	10	17	58.8	23	48	47.9	27	66	40.9
-DM: *and*	5	9	55.5	8	29	27.5	10	29	34.4
-DM: *but*	1	3	33.3	3	5	60.0	4	9	44.4
-DM: *so*	3	4	75.0	3	7	42.8	2	8	25.0
-DM: *because*	0	0	0	5	7	71.4	1	4	25.0

groups. Novice-low students averaged 46.7% silence in their monologues compared to 33.9% for novice-high students. Results from a t-test indicated that in pause duration there was a significant difference at p<0.001 (0.1%) level of critical probability, but for the two variables of mean length runs and pause frequency, there was not a significant difference, even at p<0.05 (5%) level of critical probability. Analysis also showed that novice-low speakers paused twice as long before fillers than novice-high speakers.

Discussion

The results concerning the first two hypotheses regarding pauses and mean length runs indicate that students might have similar amounts of pausing in their speech. As they move up in their proficiency, the duration of the pauses decreases while their MLRs (their ability to talk without interruption) increases.

As for the data on the fluency rates A and B, there were meaningful differences between the two rates, among these three levels. However, the most important difference between the two rates (A and B) seemed to be in the novice-high level, indicating that fluency gains become more apparent at this level. Third, in regard to pausing, the data indicates that novice-low speakers relied more on the use of Japanese and fillers, after pausing, than did higher level speakers. Finally, pauses in all levels seemed to function as hesitation markers and as signals about more information. There was a much higher level of overall repetition in the speech of the novice-high students, indicating problems regarding lexis and phrasing. The use of discourse markers also increased indicating more complexity in the speech of the students. This is key as fluency is also reflected in the use of varied syntax.

In sum, it was clear that important distinctions existed at the novice level of fluency. So it is important for teachers to give feedback to students about their own MLRs and their own pausing so as to focus on producing increasingly longer *chunks* of speech.

Conclusion

This case study examined possible differences in monologues of Japanese EFL learners. The results provided data about pausing frequency, duration and mean length runs among the three groups of novice-level speakers. It must be said, however, that without some form of videotaped feedback (or transcripts), the extent of students' shortcomings will not be easily apparent to both the students and teacher. Teachers should help students to pay more attention to pause duration, repetition, and the use of fillers of their speech through the use of videotapes and transcripts. More fluency-based tasks can also be introduced in the classroom such as mocking tasks (repeating and extending on what was said), timed speeches, shadowing, and fluency reviews in which students focus on asking and answering questions at a faster interval.

The data in this case study does lead to more questions. Do women and men have different pausing strategies? Do novice level speakers (in all levels) have similarities in fluency in regard to pause duration, frequency, and fluency rates in both monologues and dialogues? What specific factors show the greatest improvement with English language instruction over a school year? Further studies might look at the fluency rates of intermediate students and of various nationalities. The more that is known about fluency, the more assistance can be extended to all EFL students.

Note: The fluency data for this study can be viewed at <https://sites.google.com/site/fluencyandpauselogy/2010-monologue>.

References

ACTFL Guidelines (n.d). Retrieved from <sil.org/lingualinks/languagelearning/other-resources/actflproficiencyguidelines/ACTFL-GuidelinesSpeakingNovice.htm>.

Chambers, F. (1997). What do we mean by fluency? *System, 25*(4), 535-544.

Gregory, H. (2004). *Public Speaking for College and Career*. New York: McGraw-Hill.

Lennon, P. (1990). Investigating fluency in EFL: a quantitative approach. *Language Learning 40,* 387-417.

Lewin, M., McNeil, D., & Lipson, J. (1996). Enduring without avoiding: Pauses and verbal dysfluencies in public speaking fear. *Journal of Psychopathology and Behavioral Assessment, 18*(4), 387-402.

Long, R. & Tabuki, M. (2010). Pausology and interview questions: A case study. *KASELE Bulletin, 38,* 19-32.

O'Connell, D. C., & Kowal, S. (1980). Prospectus for a science of pausology. In H.W. Dechert & M. Raupach (Eds.), *Temporal Variables in Speech: Studies in Honour of Fireda Goldman-Eisler* (pp. 3-10). The Hague: Mouton.

Richards, J. C., Platt, J., & Platt, H. (1992). *Longman Dictionary of Language Teaching and Applied Linguistics*. Harlow: Longman.

Raupach, M. (1987). Procedural knowledge in advanced learners of a foreign language. In J. Coleman & R. Towell (Eds.), *The Advanced Language Learner* (pp. 123-56). London: CILTR.

Riggenbach, H. (1991). Toward an understanding of fluency: a microanalysis of nonnative speaker conversations. *Discourse Processes, 14,* 423-441.

Skehan, P. (1996). Second-language acquisition research and task-based instruction. In J. Willis & D. Willis (Eds.), *Challenge and Change in Language Teaching* (pp.17-30). Oxford: Heinemann.

Van Donzel, M.E., & Koopsman-Van Beinum, F.J., (1996). *Pausing strategies in discourse in Dutch.* Retrieved from <asel.udel.edu/icslp/cdrom/vol2/505/a505.pdf>.

Wendel, J. (1997). *Planning and second language narrative production*. Unpublished doctoral thesis, Temple University, Japan.

Yuan F., & Ellis, R. (2003). The effect of pre-task planning and on-line planning on fluency, complexity and accuracy in L2 monologic oral production. *Applied Linguistics, 24*(1), 1-27.

Robert Long is an associate professor at Kyushu Institute of Technology, and has worked as the co-editor for *The Language Teacher*, continues to serve on the *TLT* Editorial Advisory Board, and to review the JALT Proceedings and for Kyushu Academic Society of English Language Education (KASELE). He has published numerous textbooks on reading, speaking, and technical English. His interest areas include pragmatics, pausology, discourse analysis, and material writing.

Masatoshi Tabuki is a professor at Kyushu Institute of Technology and has published extensively about English and Japanese conversational analysis, pragmatic and semantic characteristics of Japanese and English. He has been the chief editor for Kyushu Academic Society of English Language Education (KASELE).

Appendix 1. Transcripts
Student I. R.

2:03.82 minutes, 85.5 seconds of silence
71.2% Silence, 4.6 Average mean length run
Articulation Rate: 0.75

1. I (.) I learned (2.3) about (17.6) hhh I learned about English.

2. (5.7) hhh English: is: hhh very important. hhh (12.3) I want to

3. speak English very well. (12.7) I (25.8) hhh I go to America, (.) hhh

4. eh next year. I (2.2) so, I (.) learn (5.6) so I (1.3) so I want to learn

5. English.

Student R. M.

1:10.84 minutes 51.8 seconds of silence
73.1% Silence, 6.0 Average mean length run
Articulation Rate: 0.79

1. I learned (4.5) basic English. (12.1) Speaking (.) and writing (.) and

2. reading. (35.2) eh, I (.) I enjoyed this class (.) and English.

For novice-mid subjects, the amount of silence ranged from 44.7% to 59.5% and averaged 52.7% whereas mean length runs were 6.9 syllables between pauses. AR ranged from 0.58 to 1.34, averaging 0.78. Time spent talking ranged from 2:54.11 to 1:12.24, averaging 1:9.4 minutes. Transcripts include:

Student S. K.

1:12.24 minutes, 37.6 seconds of silence,
52.0% Silence, 4.2 Average mean length run
Articulation rate: 0.67

1. Mmmm…eto, (.) I learned (5.2) (sniffle) eh, (.) I learned (.) how to

2. make (.) long, long sentence, long sentence. (4.5) *ando, ando* hhh

3. (7.3) communication, co…communication. (3.8) At*o*, made (.) a lot of

4. friends. (2.1) Ma! hhh (3.4) *Eto*, (.) met a nice teacher. (2.7)

5. (Japanese) Eh, (8.6) (Japanese) no idea.

Student Y. T.

1:40.28 minutes, 57.9 seconds of silence
57.7% Silence, 9.8 Average mean length run
Articulation rate: 0.61

1. I I learned (6.6) important of speaking English (2.6) because we

2. should (3.3) should use English very much, (.) to international

3. £international£ things. hhh (16.7) And*o* I learned (5.2) important, (.)

4. it is important to make friends. (23.5) I found it true difference in,

5. difference from studying English.

The amount of silence in novice-high subjects ranged from 9.3% to 37.5% and averaged 25.6%; mean length runs were 6.2 syllables between pauses. AR ranged 2:55.72 to 0.59.77, averaging 1.9.1 seconds. Time spent talking ranged from 2:55:72 to 0:59.77, averaging 1:9.1 seconds. Transcripts include:

Student I. K.

2:37.11 minutes, 51 seconds of silence
32.4% Silence, 4.8 Average mean length run
Articulation rate: 0.83

1. I learned English, (.) English, English is very fun. (3.6) And uh, (.)

2. uh, English is very important to speak (.) in the world*o* (2.5) so I

3. want to study English more (.) times. (8.4) Mmmm..(3.6) so oh, oh,

4. oh, (.) ah, I I I I I love English (Japanese) (5.0) I I I oh, hhh English is

5. very difficult for me, (.) but I want to study English. (5.2) I (.) I

6. want to (.) I want to (3.7) speak (6.7) I wanted to, to to (15.6) hmm,

7. (sniffle) (3.3) I I I I (13.8) I like swimming.

Student Y. M.

1:33.92 minutes, 8.8 seconds of silence
9.3% Silence, 13.8 Average mean length run
Articulation rate: 1.01

1. I I became (.) I became able (.) I became able to communicate and

2. talk by English and I learned Japanese culture and foreign culture

3. and (.) I through through English class I ha*ve* something that I

4. think about (.) family, and family, sports, music and food. I (6.3) I I

5. can make a lot of friends. (2.5) £hh £ *Ah*, I I can I become became to

6. be able to like*d* my idea by English. I, my En…

Appendix 2. CA Transcription Symbols
Manner/Quality

Smile quality	£
Exhale / inhale	hhh
vocalism	(sniffle)
click	.t
laugh pulse	heh
laughing word	wo(h)rd
laughter	heh heh
Low pitch	↓
High pitch	↑
pause, timed	(1.2)
4. pause, short	(.)
lag (prosodic length / elongated sound)	:
unintelligible	( )
uncertain	(word)
Emphatic tone	!
Interviewer comment	[[ ]]

JALT2011 *Teaching • Learning • Growing*
Nov 18–21, 2011
National Olympics Memorial Center, Yoyogi, Tokyo
<jalt.org/conference>